AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): An ink cartridge for an ink-jet recording apparatus comprising:

a container body having an ink supply port, the container body including a front wall, a back wall and a lower surface;

a storage element disposed on said container body;

electrodes to be in contact with respective contacts provided in the recording apparatus accommodating the container body therein; and

a recess located at a lower portion of the front wall of the ink cartridge and between the ink supply port and the electrodes and is adapted to contact a protrusion of said recording apparatus to maintain the electrodes in contact with respective contacts,

wherein the recess includes a first width along a carriage moving direction, the protrusion includes a second width along the carriage moving direction, the first width and the second width being substantially the same, and

recess receives the protrusion to align the electrodes with respective contacts in a carriage moving direction in a state in which the electrodes contact the contacts, the ink cartridge further comprising:

a front retaining lever disposed at the front wall and above the electrodes, and resiliently disposed at an acute angle with respect to the front wall, and the front retaining lever comprising:

a base attached to the front wall,

a upwardly pointing distal end, the acute angle being formed by the distal end, the base and a portion of the front wall above the base,

an exterior surface facing away from the front wall and

a projection formed at the exterior surface, the projection slideably engaging into a recess of a carriage against a resiliency of the front retaining lever,

a back retaining member disposed at the back wall,

a slit disposed at the lower surface behind the ink supply port, extending along an inserting direction and a withdrawing direction of the ink cartridge and adapted to receive a projecting member of the recording apparatus.

2. (previously presented): The ink cartridge according to claim 1, wherein the recess includes at least one recess that has an opening at a leading end thereof in an ink cartridge insertion direction, and that is engageable with the protrusion.

3. (withdrawn): The ink cartridge according to claim 2, wherein the at least one recess includes a pair of recesses located opposite from each other with respect to the electrodes.

4. (original): The ink cartridge according to claim 2, wherein the recess has an upper end wall to be contacted with an upper end of the protrusion.

5. (original): The ink cartridge according to claim 4, wherein the wall extends in parallel to a direction in which the electrodes are arranged.

6. (previously presented): The ink cartridge according to claim 4, wherein a contact area between the wall and the recess is wider than a width of an area in which the electrodes are arranged.

7. (withdrawn): The ink cartridge according to claim 1, wherein the positioning system includes a blind hole opened at a bottom surface of the container body.

8. (withdrawn): The ink cartridge according to claim 1, wherein the storage element and the electrodes are mounted on a same flexible cable.

9. (currently amended): An ink cartridge for an ink-jet recording apparatus, comprising:

a container body having an ink supply port, the container body including a front wall, a back wall and a lower surface;

electrodes which are to be in contact with respective contacts provided in the recording apparatus and which are formed in a side where the ink supply port is provided;

a storage element provided to a predetermined area of the container body and connected to the electrodes; and

a positioning recessed portion located at a lower portion of the front wall of the ink cartridge and open to the side where the ink supply port is provided, and receives a protruding portion formed in the recording apparatus to maintain the electrodes in contact with respective contacts, the positioning recessed portion having a first width along a carriage moving direction, the protruding portion having a second width along the carriage moving direction, wherein the first width and the second width are substantially the same,

wherein the positioning recessed portion contacts the positioning member to align the electrodes with respective contacts in a carriage moving direction in a state in which the electrodes contact the contacts, the ink cartridge further comprising:

a front retaining lever disposed at the front wall and above the electrodes, and resiliently disposed at an acute angle with respect to the front wall, and the front retaining lever comprising:

a base attached to the front wall,

a upwardly pointing distal end, the acute angle being formed by the distal end, the base and a portion of the front wall above the base,

an exterior surface facing away from the front wall and

a projection formed at the exterior surface, the projection slideably engaging into a recess of a carriage against a resiliency of the front retaining lever,

a back retaining member disposed at the back wall,

a slit disposed at the lower surface behind the ink supply port, extending along an inserting direction and a withdrawing direction of the ink cartridge and adapted to receive a projecting member of the recording apparatus.

10. (original): The ink cartridge according to claim 9, wherein a circuit board having the electrodes is accommodated in a recessed portion formed in said container body.

11. (original): The ink cartridge according to claim 9, wherein said positioning recessed portion is formed at a position below a circuit board having the electrodes.

12. (withdrawn): The ink cartridge according to claim 9, wherein a pair of the positioning recesses are provided to be located opposite from each other with respect to the electrodes.

13. (original): The ink cartridge according to claim 9, wherein said container body has a recessed portion for accommodating a circuit board having the electrodes, and has a wall which defines said recessed portion and is brought into contact with a top surface of said protruding portion.

14. (original): The ink cartridge according to claim 13, wherein the wall extends in parallel to a direction in which the electrodes are arranged.

15. (previously presented): The ink cartridge according to claim 13, wherein a contact area between the wall and the protruding portion is wider than a width of an area where the electrodes are arranged.

16. (original): The ink cartridge according to claim 9, wherein the storage element is mounted on a circuit board.

17. (withdrawn): The ink cartridge according to claim 9, wherein a flexible cable is connected to a circuit board having the electrodes, and the storage element is connected to the electrodes through the flexible cable.

18. (withdrawn): The ink cartridge according to claim 17, wherein the storage element is mounted on the flexible cable.

19. (withdrawn): The ink cartridge according to claim 9, wherein the storage element and the electrodes are mounted on a same flexible cable.

20. (previously presented): The ink cartridge according to claim 1, wherein the recess contacts the protrusion to further align the electrodes with respective contacts in at least one direction of a paper feeding direction and a vertical direction in a state in which the electrodes contact the contacts.

21. (previously presented): The ink cartridge according to claim 9, wherein the positioning recessed portion contacts the positioning member to further align the electrodes with respective contacts in at least one direction of a paper feeding direction and a vertical direction in a state in which the electrodes contact the contacts.

22. (previously presented): The ink cartridge according to claim 1, wherein the recess is located at an edge portion where a bottom wall formed with the ink supply port meets a side wall formed with the electrodes.

23. (previously presented): The ink cartridge according to claim 1, wherein the recess extends from a bottom wall formed with the ink supply port to reach at least a lower end of a circuit board having the electrodes.

24. (previously presented): The ink cartridge according to claim 22, wherein the recess extends from the bottom wall formed with the ink supply port to reach at least a lower end of a circuit board having the electrodes.

25. (currently amended): An ink cartridge for an ink-jet recording apparatus having a protrusion and contact electrodes, comprising:

a container body having an ink supply port, the container body including a front wall, a back wall and a lower surface;

a storage element associated with said container body;

a recess disposed at a ~~bottom~~ lower portion of the front wall of the ink cartridge, having an opening along an insertion direction of the ink cartridge, wherein a width of the opening along a direction perpendicular to the insertion direction and parallel to a carriage moving direction is substantially equal to a width of the protrusion along the direction perpendicular to the insertion direction and parallel to the carriage moving direction; and

cartridge electrodes disposed at a side of the ink cartridge, contacting respective contact electrodes provided in the recording apparatus accommodating the ink jet cartridge therein,

wherein the recess contacts the protrusion to align the cartridge electrodes with respective contact electrodes in a carriage moving direction in a state in which the cartridge electrodes contact the contact electrodes, the ink cartridge further comprising:

a front retaining lever disposed at the front wall and above the cartridge electrodes, and resiliently disposed at an acute angle with respect to the front wall, and the front retaining lever comprising:

a base attached to the front wall,

a upwardly pointing distal end, the acute angle being formed by the distal end, the base and a portion of the front wall above the base,

an exterior surface facing away from the front wall and

a projection formed at the exterior surface, the projection slideably engaging into a recess of a carriage against a resiliency of the front retaining lever,

a back retaining member disposed at the back wall,

a slit disposed at the lower surface behind the ink supply port, extending along an inserting direction and a withdrawing direction of the ink cartridge and adapted to receive a projecting member of the recording apparatus.

26. (previously presented): The ink cartridge according to claim 25, wherein the protrusion fitted into the recess fixedly maintains electrical contact between the cartridge electrodes and respective contact electrodes.

27. (previously presented): The ink cartridge according to claim 25, wherein the cartridge electrodes are on a circuit board and the recess is disposed substantially on a centerline

of the circuit board and the centerline of the circuit board is coincident with a centerline of the ink jet cartridge.

28. (withdrawn): The ink cartridge according to claim 25, wherein a the cartridge electrodes are on a circuit board and the recess is disposed substantially on a centerline of the circuit board and the centerline of the circuit board is offset from a centerline of the ink jet cartridge.

29. (withdrawn): The ink cartridge according to claim 25, wherein the recess is a first recess of a plurality of recesses and the protrusion is a first protrusion of a plurality of protrusions.

30. (withdrawn): The ink cartridge according to claim 29, wherein each of the plurality of recesses is disposed at the bottom of the ink cartridge, an opening of each of the plurality of recesses is disposed along the insertion direction of the ink cartridge, and a width of the opening of each of the plurality of recesses along a main scanning direction is substantially equal to a width of a respective one of the plurality of protrusions along the main scanning direction.

31. (withdrawn): The ink cartridge according to claim 30, wherein the cartridge electrodes are disposed between the first recess and a second recess of the plurality of recesses along the main scanning direction.

32. (currently amended): An ink cartridge for an ink-jet recording apparatus comprising:

a container body having an ink supply port, the container body including a front wall, a back wall and a lower surface;

a storage element disposed on said container body;

electrodes to be in contact with respective contacts provided in the recording apparatus accommodating the container body therein; and

a recess located at a lower portion of the front wall of the ink cartridge and proximate the electrodes and adapted to contact a protrusion of said recording apparatus to maintain the electrodes in contact with respective contacts along at least a carriage moving direction,

wherein the recess includes a first horizontal width along the carriage moving direction, the protrusion includes a second horizontal width along the carriage moving direction and the first width and the second width are substantially the same, the ink cartridge further comprising:

a front retaining lever disposed at the front wall and above the electrodes, and resiliently disposed at an acute angle with respect to the front wall, and the front retaining lever comprising:

a base attached to the front wall,

a upwardly pointing distal end, the acute angle being formed by the distal end, the base and a portion of the front wall above the base,

an exterior surface facing away from the front wall and

a projection formed at the exterior surface, the projection slideably engaging into a recess of a carriage against a resiliency of the front retaining lever,

a back retaining member disposed at the back wall,

a slit disposed at the lower surface behind the ink supply port, extending along an inserting direction and a withdrawing direction of the ink cartridge and adapted to receive a projecting member of the recording apparatus.

33. (previously presented): An ink cartridge according to claim 32, wherein each of the electrodes has a third horizontal width along the carriage moving direction substantially equal to

or greater than a difference between the first horizontal width of the recess and the second horizontal width of the protrusion.

34. (previously presented): The ink cartridge according to claim 33, wherein the first horizontal width is a distance between two vertical walls of the recess and the second horizontal distance is a distance between the two vertical walls of the protrusion.

35-37. (canceled).

38. (withdrawn): The ink cartridge according to claim 37 further comprising a slit disposed behind the ink supply port and adapted to receive a projecting member of the recording apparatus, wherein the positioning system is disposed in front of the ink supply port and the recording apparatus has a spring disposed behind the projecting member, engaging the ink cartridge between the slit and the back retaining member.

39. (previously presented): The ink cartridge according to claim 32, wherein the carriage moving direction is perpendicular to a paper feeding direction and a cartridge insertion direction.

40. (previously presented): The ink cartridge according to claim 32, wherein the recess comprises a first sidewall and a second sidewall, the first sidewall opposes the second sidewall, and the protrusion is received in the recess.

41. (canceled).

42. (previously presented): The ink cartridge according to claim 1, wherein the recess comprises a first sidewall and a second sidewall, the first sidewall opposes the second sidewall, and the protrusion is received in the recess.

43. (previously presented): The ink cartridge according to claim 9, wherein the positioning recessed portion comprises a first sidewall and a second sidewall, the first sidewall opposes the second sidewall, and the protruding portion is received in the recess.

44. (withdrawn): The ink cartridge according to claim 32, wherein the positioning system includes a pair of side walls disposed adjacent to the electrodes so that the electrodes are located between the side walls in the carriage moving direction.

45. (withdrawn): The ink cartridge according to claim 44, wherein the side walls are defined respectively by inner walls of recesses formed in the container body.

46-60. (canceled).